

A NEW SPECIES OF
NYMPHAEA (NYMPHAEACEAE)
FROM THE AMAZON BASIN

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ABSTRACT

A night-blooming, sagittate-leaved water-lily of *Nymphaea* subgenus *Hydrocallis* is described from the Amazon drainage in northern Brazil.

During the course of research involving the neotropical *Nymphaea* subgenus *Hydrocallis*, several undescribed species have come to my attention. The subgenus is characterized by nocturnal flowering habit, tetrameric arrangement of outer flower parts, and clavate carpellary appendages. Four of these new taxa are described in a separate publication (Wiersema, 1984). A fifth has since been discovered and is described below.

NYMPHAEA POTAMOPHILA Wiersema, sp. nov. (Fig. 1).

Folia plerumque variegata rubicunda, elliptico-sagittata, in siccis speciminibus punctis elevatis ex trichosclereidibus interioribus ornata, sclereidibus acicularibus interioribus nullis; processus carpellorum 7–9 mm longi; radii stigmatum sclereidibus acicularibus nullis.

Rhizome not seen. Leaf blades chartaceous, elliptic-sagittate, to 20 cm or more long, to 10 cm or more wide, ca 1.8–2.5 times as long as wide, entire, acute-tapering to somewhat rounded at apex, peltate 1–2 mm from base of sinus, the sinus 0.53–0.62 times length of blade, sagittate at base, the lobes acute-tapering; upper surface green, often strongly variegated with red, when dried with numerous tiny prominences from underlying trichosclereids, lacking acicular or filiform sclereids; undersurface greenish to variegated with dark red, usually marked with slender, branched rusty-brown lines when dried; venation radiate centrally, scarcely evident toward margins, the principal veins 7–11, somewhat impressed. Petioles to 3 mm in diam., elongating to 4 m or more, glabrous. Peduncles to 4 mm in diam., elongating to 4 m or more, glabrous. Flowers floating, the sepals, petals, and outer stamens in distinct whorls of four; sepals green, oblong-ovate, ca 4–5 cm long, ca 1.5–2.0 cm wide, acute at apex, when dry usually marked with slender brownish or blackish lines, with few to numerous acicular sclereids, inconspicuously nerved; petals ca 16, impregnated with acicular sclereids, the outer greenish abaxially, slightly shorter and often narrower than sepals,

with apex acute, the inner becoming creamy-white, ca 2.5–3.7 cm long, ca 0.8–1.2 cm wide, acuminate; transition to stamens gradual; stamens ca 40–60, creamy-white, impregnated with abundant acicular sclereids, the outermost to 3 cm long, with filaments to 8 mm wide, the inner with filaments to 1.4 mm wide and connectives prolonged to 0.2 mm beyond anthers, the inner anthers 0.5–0.6 times as long as stamen; carpels ca 19–21, the appendages cream-colored, ca 7–9 mm long, clavate, the enlarged tips ca 3 mm long, ca 1–1.2 mm in diam., with blunt apex, the stigmatic rays lacking acicular sclereids, the papillae cells remaining attached. Fruits usually present, seeds 0.85–1.3 mm long, 0.7–1 mm wide, 1.1–1.3 times as long as wide, with clusters of hairs 45–210 μm long, the fine surface topography smooth. Pollen diameter 25–35 μm .

TYPE: BRAZIL. AMAZONAS: Rio Negro acima do lugar São Luis, pouco acima de Barcelos, 28 Jun 1979, *L. A. Maia, E. Soares, J. Ramos, and C. D. Mota 124* (INPA!).

Additional specimens examined. BRAZIL. AMAZONAS: Rio Negro, Padauri, Telheiro, 30 Oct 1947, *Fróes 22686* (IAN); Rio Negro, Parana Ararirá, ca 100 km above Barcelos, 11 Oct 1978, *Madison et al. 6155* (SEL, NY). PARÁ: São Francisco do Cururú Mission, boca de Igarapé Kenebiit-Taibiri para o Rio Cururú, 31 Mar 1942, *Sioli 4* (IAN).

DISTRIBUTION. Known only from the states of Amazonas and Pará in northern Brazil. Most collections are from river margins, with the long petioles and peduncles and collection data present on specimens indicating *N. potamophila* can survive in water as much as 4–5 m deep.

REPRODUCTION. Both pollen viability and seed set in this species appear to be high, as judged from the limited amount of herbarium material available. Clearly, seed production is an important means of dispersion in this taxon. No evidence is presently available to determine whether autogamy contributes to seed production.

RELATIONSHIPS. *Nymphaea potamophila*, on the basis of seed morphology and overall morphology, can be grouped with *N. blanda* G. F. W. Mey. and *N. oxypetala* Planch. Flowers of *N. potamophila* are similar to those of *N. blanda*, the latter having longer carpellary appendages and more numerous acicular sclereids in the sepals. The floating sagittate leaves of *N. potamophila* are reminiscent of *N. oxypetala* which has sagittate submersed leaves, but floating sagittate leaves of the latter species are reduced both in number and size. The poorly known *N. belophylla* Trickett, for which type material is missing at both K and BM, possesses sagittate floating leaves resembling those of *N. potamophila*. Flowers of *N. belophylla*, as described by Trickett (1971), appear to have carpellary appendages approaching twice the length of those in *N. potamophila*. A plant relatable to *N. belophylla*, collected by Baltazar Trujillo in Barinas, Venezuela, indeed displays these longer carpellary appendages. This plant is further distinguished in an abundance of acicular sclereids in the leaf and stigmatic ray tissues, where these structures are completely absent in *N. potamophila*. If this Venezuelan plant is in

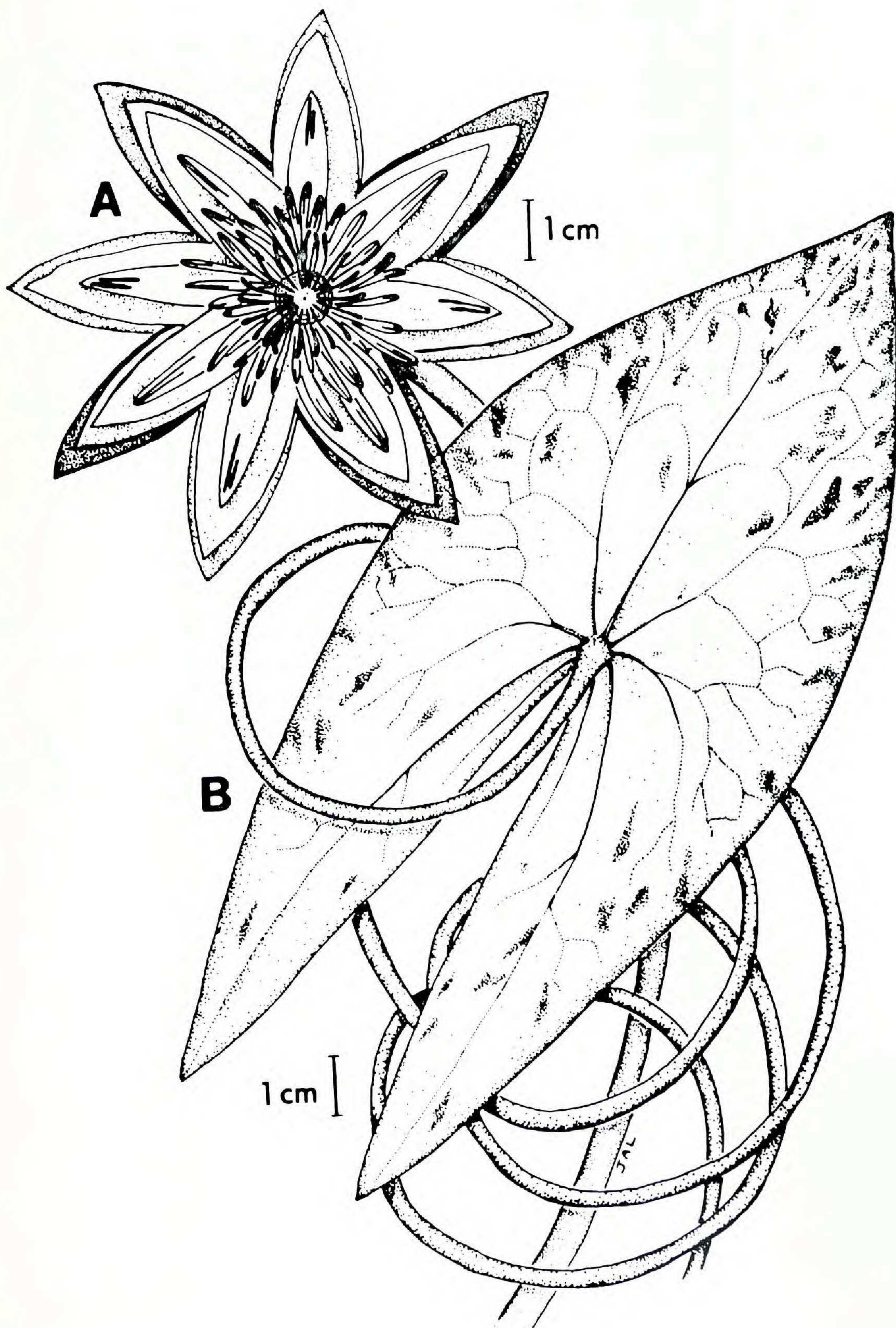


Fig. 1. *Nymphaea potamophila*: (A) open flower (B) undersurface of leaf.

fact *N. belophylla*, its observed character differences support its taxonomic separation from *N. potamophila*, in view of the conservative nature of these characters among other *N.* subg. *Hydrocallis*. Accordingly, the two taxa have been segregated at the rank of species. However, additional collection and study of these taxa in the South American interior are clearly necessary to provide a better understanding of their relationship.

REFERENCES

- TRICKETT, R. S. 1971. A new tropical American waterlily, *Nymphaea belophylla*. Kew Bull. 26(1): 29-31.
- WIERSEMA, J. H. 1984. Systematics of *Nymphaea* subgenus *Hydrocallis* (Nymphaeaceae). I. Four new species from the neotropics. Brittonia 36: (in press).